

# **EXHIBIT A**

## **Highly Confidential - AEO**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

ADVANCED CLUSTER SYSTEMS, INC.,

Plaintiff,

v.

NVIDIA CORPORATION, NVIDIA  
SINGAPORE PTE. LTD., AND NVIDIA  
INTERNATIONAL, INC.

Defendants.

Civil Action No. 1:19-cv-02032-MN-CJB

**PLAINTIFF ADVANCED CLUSTER SYSTEMS, INC.’S SUPPLEMENTAL  
RESPONSES TO INTERROGATORIES NOS. 1, 7-9 AND 11-14**

Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure, Plaintiff Advanced Cluster Systems, Inc. (“ACS”) hereby provides a supplemental response to Defendants NVIDIA Corporation, NVIDIA Singapore Pte. Ltd., and NVIDIA International, Inc. (collectively “NVIDIA”) Interrogatories Nos. 1, 7-9 and 11-14 as follows.

**GENERAL STATEMENT AND OBJECTIONS**

ACS asserts the following General Objections to each of Defendants’ instructions and Interrogatories. In addition to these General Objections, ACS states specific objections to each Interrogatory, where appropriate, including objections that are not generally applicable to all of the Interrogatories. By setting forth such specific objections, ACS does not intend to limit or restrict these General Objections.

1. ACS objects to the following definitions used in the Interrogatories:
  - a. ACS objects to the definition of “Plaintiff,” “You,” and “Your” to the extent the terms include entities that are not parties to this litigation and/or that ACS does not

d. The right to object on any ground at any time to the Interrogatories or other discovery relating to information and/or information or the subject matter thereof.

13. ACS is providing information that was uncovered by means of a reasonable investigation and that is the subject of legitimate discovery. The following responses are based upon information presently available to and located by ACS after a reasonable search. However, discovery is ongoing in this case, and ACS has not yet completed its investigation of the facts relating to this case or completed discovery, and has not completed preparation for trial. The responses given herein are without prejudice to ACS's right to supplement its responses, should additional information be subsequently discovered, and to rely upon any subsequently discovered evidence. Moreover, certain of the Interrogatories are premature in that they seek information that ACS cannot provide at this stage of the case. Finally, certain of the Interrogatories are subject to specific objections and are therefore not the subject of legitimate discovery.

Without waiving the General Objections set forth above, ACS provides the following supplemental responses to Defendants' Interrogatories Nos. 1, 7-9 and 11-14:

### **RESPONSES TO INTERROGATORIES**

#### **INTERROGATORY NO. 1:**

For Each asserted claim of the Patents-In-Suit, state the date on which the claimed invention was conceived and the date on which the claimed invention was reduced to practice, describe in detail all facts and circumstances Relating To the conception and reduction to practice of each such claimed invention, and Identify each person with knowledge of such conception or reduction to practice, including the nature of each person's participation, involvement, and/or contribution to such conception and/or reduction to practice, Identify the earliest priority date to

which Each asserted claim is entitled and the basis for such date, and Identify all Documents supporting the respective conception, reduction to practice and priority dates.

**RESPONSE TO INTERROGATORY NO. 1:**

Plaintiff incorporates its General Statement and Objections above as if set forth in full herein. Plaintiff further objects to this interrogatory to the extent it seeks documents or information protected by the attorney-client privilege, work product doctrine, or any other applicable privilege or immunity. Plaintiff further objects to this interrogatory as overly broad and unduly burdensome to the extent it seeks “all Documents” concerning the stated subjects, as objected to in Plaintiff’s General Statement and Objections. Plaintiff further objects to this interrogatory as overly broad and unduly burdensome to the extent it seeks a description of all facts and circumstances Relating To the conception and reduction to practice of each such claimed invention. Plaintiff further objects to this interrogatory as containing multiple discrete subparts under Fed. R. Civ. P. 33. Properly counted, this interrogatory constitutes at least five different discrete subparts to be counted against the total permitted to Defendant. Plaintiff further objects to this interrogatory as vague and ambiguous as to the scope and meaning of “knowledge of such conception or reduction to practice.” Plaintiff further objects to this interrogatory as vague and ambiguous as to the scope and meaning of “nature of each person’s participation, involvement, and/or contribution.” Plaintiff further objects to this interrogatory as redundant to the extent it seeks “the earliest priority date to which Each asserted claim is entitled and the basis for such date,” which is subject to disclosure as part of Plaintiff’s preliminary disclosure of accused instrumentalities and asserted claims. Plaintiff also objects to this interrogatory as premature to the extent it seeks “the earliest priority date to which Each asserted claim is entitled and the basis for such date,” which is subject to disclosure as part of Plaintiff’s Disclosure of Infringement Contentions. Plaintiff further objects

software with all major functionality by May 31, 2006. ACS filed a provisional application related to this work on June 13, 2006. ACS\_NVIDIA\_001215–ACS\_NVIDIA\_001220.

The inventors conceived of the invention at least as early as December 14, 2005. ACS reduced the invention to practice at least as early as June 13, 2006. The Asserted Claims are entitled to a priority date no later than June 13, 2006. Dr. Dager and Mr. Tannenbaum have knowledge of the facts supporting conception and reduction to practice.

ACS has produced business documents, pursuant to Federal Rule of Civil Procedure 33(d), from which NVIDIA can derive or ascertain additional information responsive to this Interrogatory at ACS\_NVIDIA\_000001–ACS\_NVIDIA\_001977.

**SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 1:**

ACS incorporates its General Statement and Objections and its Specific Objections above as if set forth in full herein. Subject to and without waiving the foregoing objections, ACS responds as follows:

Zvi Tannenbaum (President and CEO of ACS) and Dean Dager (President and CEO of Dager Research, Inc.), co-inventors of the '768 Patent, met in mid-2005. At that time, ACS was developing cloud-based computing services for its network of Apple computers. One service was called Math Grid Toolkit (MGT). The primary purpose of MGT was to provide users with a web-based interface for running Mathematica modules on a gridMathematica cluster. ACS retained ScienceOps to assist in the development work for the web-based interface. The MGT development work associated with the web-based interface led to ACS filing a provisional patent application on September 26, 2005 (Provisional Application No. 60/720,442), and three utility patent applications on September 26, 2006 (No. 11/527,319), May 16, 2007 (11/749,554), and March 18, 2013

(13/846,567). Two of the utility applications issued as U.S. Patent Nos. 8,402,080 and 8,849,889. ACS never commercialized the MGT web-based interface or the inventions covered by the patents.

ACS ultimately stopped pursuing the MGT service in part due to known limitations with gridMathematica. Mr. Tannenbaum recognized that gridMathematica could not utilize the processing power of every processing core of the computers on the ACS network. Additionally, gridMathematica operated in a grid configuration. The grid configuration was well suited to applications in which multiple parallel computations would take place independently, without the need to communicate intermediate results between processors. However, gridMathematica could not take full advantage of the processing power of parallel computing on a cluster because it did not utilize the type of asynchronous, peer-to-peer communications between nodes available in cluster computing.

Mr. Tannenbaum wanted to develop a mathematical computation product that could utilize the full power of the ACS network to achieve the highest possible parallel computing performance. He approached Dr. Dager with this idea. Through subsequent collaboration, Mr. Tannenbaum and Dr. Dager determined that they could add asynchronous, peer-to-peer communications to any modular program (i.e., any program with a front-end module for a user interface and a back-end module that performs the calculations) by adding a parallelization layer. Interposing a parallelization layer between the front end and the back end would create a new cluster-computing architecture that would significantly reduce the complexity of parallelizing modular programs. The parallelization layer could provide a novel infrastructure layer to cover partitioning and mapping data to processors, and provide internal asynchronous, peer-to-peer communication structures to each processor node that handled the parallel tasks. No modification of the back-end code would be required.

They decided to apply the new cluster-computing architecture first to Mathematica. The result was a cluster implementation of Mathematica that included a parallelization infrastructure that provided MPI-based, peer-to-peer communication between each Mathematica computational kernel on each node of the cluster. The project was initially called MathPOOCH and later marketed as Supercomputing Engine for Mathematica™ (SEM™). MathPOOCH/SEM™ was a development project entirely separate from MGT web-based interface.

On September 2005, Dr. Dauger drafted a hand-written document outlining the approach for the MathPOOCH project. ACS\_NVIDIA\_001449–ACS\_NVIDIA\_001450. Dr. Dauger provided a formal MathPOOCH scoping document to Mr. Tannenbaum on December 14, 2005. ACS\_NVIDIA\_001372–ACS\_NVIDIA\_001373. On January 10, 2006, ACS filed a provisional patent application based on the scoping document, assigned application serial number 60/757,573. Ultimately, this provisional application lapsed. On January 31, 2006, ACS contracted with Dauger Research to develop the software for implementing MathPOOCH. Dr. Dauger developed an initial working version of the software with all major functionality by May 31, 2006. ACS filed another provisional application related to this work on June 13, 2006 (Provisional Application No. 60/813,738). ACS\_NVIDIA\_001215–ACS\_NVIDIA\_001220. The '768 Patent claims priority to the June 13, 2006 provisional.

The inventors conceived of the inventions at least as early as December 14, 2005. ACS reduced the inventions to practice at least as early as June 13, 2006. The Asserted Claims are entitled to a priority date no later than June 13, 2006. Dr. Dauger and Mr. Tannenbaum have knowledge of the facts supporting conception and reduction to practice.

ACS has produced business documents, pursuant to Federal Rule of Civil Procedure 33(d), from which NVIDIA can derive or ascertain additional information responsive to this Interrogatory at ACS\_NVIDIA\_000001–ACS\_NVIDIA\_001977.

**RESPONSE TO INTERROGATORY NO. 7:**

ACS incorporates its General Statement and Objections above as if set forth in full herein. ACS further objects to this interrogatory to the extent it seeks documents or information protected by the attorney-client privilege, work product doctrine, or any other applicable privilege or immunity. ACS further objects to this interrogatory as overly broad, unduly burdensome, and not proportional to the needs of the case. This interrogatory requests that ACS identify disclosures supporting the claimed conception date of each limitation on a limitation-by-limitation basis. Conception is not evaluated on a limitation-by-limitation basis but rather with respect to claims as a whole. Thus, this interrogatory is overly broad, unduly burdensome, and not proportional to the needs of the case. ACS further objects to this interrogatory as vague and unintelligible to the extent as to the scope and meaning of “your contention that the limitation is entitled to the December 14, 2005 conception date.” As noted above, conception is not evaluated on a limitation-by-limitation basis but rather with respect to claims as a whole. ACS further objects to this interrogatory as vague and ambiguous as to the scope and meaning of “disclosures, including any disclosures within the documents produced by [ACS] at ACS\_NVIDIA\_001372–ACS\_NVIDIA\_001373 and ACS\_NVIDIA\_001449–ACS\_NVIDIA\_001450.” ACS objects to this request as calling for a legal conclusion. ACS further objects to this interrogatory as premature to the extent it seeks information that is the subject of expert discovery. ACS further objects to this interrogatory as containing multiple discrete subparts under Fed. R. Civ. P. 33. Discovery is currently in its early



stages and as such is ongoing and continuous. Therefore, ACS reserves the right to supplement this response.

Subject to and without waiving the foregoing objections, ACS is willing to meet and confer regarding this Interrogatory.

**SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 7:**

ACS incorporates its General Statement and Objections and its Specific Objections above as if set forth in full herein. Subject to and without waiving the foregoing objections, ACS responds as follows:

ACS maintains its objections that conception is not evaluated on a limitation-by-limitation basis, but rather with respect to claims as a whole. “An inventor's testimony on conception can be corroborated through several pieces of evidence, even though no one piece of evidence independently proves conception, and even circumstantial evidence, so long as the evidence supports that the inventor’s story is credible. There is no particular formula required for corroboration, and instead, a rule of reason analysis applies to the evaluation of all pertinent evidence.” *E.I. du Pont De Nemours & Co. v. Unifrax I LLC*, 921 F.3d 1060, 1076 (Fed. Cir. 2019) (internal quotation marks and citations omitted).

ACS incorporates by reference its response to Interrogatory No. 1 describing the conception and reduction to practice of the invention by inventors Zvi Tannenbaum and Dean Dager. Each of the documents produced at ACS\_NVIDIA\_001372–ACS\_NVIDIA\_001373 and ACS\_NVIDIA\_001449– ACS\_NVIDIA\_001450, taken in their entirety, provide corroborating evidence for the December 14, 2005 conception date.

**SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 14:**

Subject to and without waiving the foregoing objections, ACS responds as follows:

ACS sold [REDACTED] Supercomputing Engine for Mathematica™ (SEM™) from [REDACTED]

[REDACTED] Dauger Research sold [REDACTED] SEM™ from [REDACTED]

[REDACTED] Math Supercomputer-in-a-Box.

[REDACTED] Supercomputing Engine Technology™ (SET™) SDK Developer Seat  
Annual License.

Pursuant to Fed. R. Civ. P. 33(d), ACS has produced additional financial records from which NVIDIA can derive or ascertain additional information responsive to this Interrogatory at ACS\_NVIDIA\_014821-25; ACS\_NVIDIA\_014828-59; ACS\_NVIDIA\_014879-96; ACS\_NVIDIA\_014913-68; ACS\_NVIDIA\_14971-90; ACS\_NVIDIA\_014997-15032; ACS\_NVIDIA\_015034-49; ACS\_NVIDIA\_01505-76; ACS\_NVIDIA\_024193; ACS\_NVIDIA\_034106; ACS\_NVIDIA\_008687; and ACS\_NVIDIA\_009482.

June 13, 2022

/s/ Cheryl T. Burgess

Karen E. Keller (No. 4489)

SHAW KELLER LLP

I.M. Pei Building

1105 N. Market Street, 12<sup>th</sup> Floor

Wilmington, DE 19801

(302) 298-0700

kkeller@shawkeller.com

Jon W. Gurka (Admitted *Pro Hac Vice*)

Brian C. Claassen (Admitted *Pro Hac Vice*)

Cheryl Burgess (Admitted *Pro Hac Vice*)

Karl W. Kowallis (Admitted *Pro Hac Vice*)

Ben K. Shiroma (Admitted *Pro Hac Vice*)

KNOBBE, MARTENS, OLSON & BEAR, LLP

2040 Main Street, 14th Floor

Irvine, CA 92614

(949) 760 0404